CITY OF LAS VEGAS

STANDARD PLAN GUIDELINES AND DESIGN LAYOUT FOR LAND DEVELOPMENT PROJECTS

NOVEMBER 1998

DEPARTMENT OF PUBLIC WORKS

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Preface

Publication of these CITY OF LAS VEGAS *Standard Plan Guidelines and Design Layout for Land Development Projects, 1998,* is the second edition of this document and will supersede the 1997 edition. Since the initial publication in September 1997, the City in conjunction with the consulting engineering community have worked together to refine the Guidelines to better serve the City, the engineers and developers of Las Vegas. The sections of the Guidelines addressing Standard Abbreviations, Symbols and Line Types, Standard sheet layout and Sample Drawings have been eliminated from this edition to provide design engineers more flexibility.

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SECTION 1
GUIDELINES AND CRITERIA FOR PLAN PREPARATION

1.0 Guidelines and Criteria for Plan Preparation

1.1 Plan Submittal

Submittal to the City generally falls into three categories; 1) Initial Submittal; 2) Resubmission addressing City comments and 3) the Final Submittal of the originals for City approval. The general requirements for each of these submittals is outlined in Table 1.1.

Table 1.1 - Submittal Requirements

Item	Required for Initial Screening Acceptance	Required for Resubmmittal	Required for Approval
Number of Plan Sets (bluelines)	4	As Requested	Original Mylar Duplicate Mylar
Bond Estimate Form (completed by engineer)	1 Copy	As Requested	Approved Estimate
Tentative Map or other Conditions	1 Copy	-	On File
Final Map Conditions	-	1 Copy	On File
Geotechnical Soils Investigation Report (1)	2 Copies	-	On File
Traffic Impact Analysis (2)	Submitted	Approved	On File
Drainage Study (2)	Submitted	Approved	On File
Notarized Off-Site Grading Authorization Letter (3)	-	1 Copy	On File
Deviation Requests (4)	-	1 Copy	On File
Developer Agreement Information Form (5)	-	1 Copy	On File
Subdivision or Improvement Agreement	-	-	Completed
Improvement Bonds	-	-	Posted
Plan Review and other Fees	-	-	Paid

(1) - If construction of public street is required
(2) - If required as a condition of approval
(3) - If offsite grading or construction is required
(4) - If design deviates from Guidelines or Standard Requirements
(5) - Required if Subdivision Agreement is to be used

The specific requirements of each of these categories are discussed in greater detail in the following subsections.

1.1.1 Initial Plan Submittal

Engineers submitting plans to the City for initial screening shall provide:

a. Four (4) sets of complete plans (check prints) sealed in accordance with NAC 625.611 by the Engineer in responsible charge.
b. One (1) copy of the completed Bond Estimate Form with quantities for all public improvements.
c. One (1) copy of all "Conditions of Approval" (Tentative Map Conditions of Approval from City Council and/or Planning Commission or Conditions of Approval from City Referral Group).

In addition, the following items are required as part of the initial review submittal:

d. Two (2) copies of the Geotechnical Soils Investigation Report if the project includes construction of Public Streets. The report must include a pavement section recommendation for all proposed public streets.
e. Verification of Traffic Impact Analysis (TIA) **submittal** to the Traffic Engineer if a TIA is a Condition of Approval.
f. Verification of Drainage Study **submittal** to Engineering Planning if a Drainage Study is a Condition of Approval.
g. When a project requires grading or construction off-site, One (1) copy of a notarized authorization from every private property owner on who's property work is required.
h. Completed Developer Agreement Information Form if a Subdivision Agreement will be prepared.
i. Written notice of deviations. If the plan submittal contains deviations from either these Guidelines or the requirements of the Uniform Standards and City Policy, the design engineer shall as part of the initial submittal include a letter to the City outlining all deviations and substantial reasons for requesting the deviations.

In addition to the items outlined above the Assessor's Parcel Number (APN#) shall be placed on the cover or title sheet of the submittal. Fire flow information shall be placed on the water plan and Sanitary Sewer contribution information shall be placed on the Master Utility or the first Sanitary Sewer plan and profile sheet.

All initial submittals are reviewed for conformance to the City's Initial Plan Screening Checklist. Failure of the design engineer to include the required information with the initial submittal will result in rejection of the plan submittal and the return to the design engineer. If the submittal contains sufficient information to be processed for review, the submittal will be accepted and both the design engineer and developer will be notified. Following the initial plan screening, the four (4) plan sets submitted will be circulated to various sections within the City for review and comment. This process generally takes two weeks. When comments are received from the other City reviewing

groups, Land Development will consolidate the comments and review the plans for conformance to City standards. The entire initial review process generally takes 4 to 6 weeks depending on the current work load and complexity of the project. Land Development will transmit the review comments to the design engineer and either request the plans be resubmitted for review or that mylars be submitted following corrections.

1.1.2 Resubmittal

If the Conditions of Approval or the Department of Public Works require a Drainage Study or Traffic Impact Analysis, those studies shall be approved prior to resubmittal of the improvement plans to Land Development.

Engineers resubmitting plans to the City for review shall provide:

a. One (1) to four (4) sets of complete plans (check prints) as requested from the initial review, sealed by the Engineer in responsible charge.
b. One (1) copy of the initial plan review comments (redlined plans). The redline of the Fire plan should be retained by the Engineer for use in obtaining Fire signature on the Mylar.
c. One (1) copy of the Final Map Conditions of Approval from City Council and/or Planning Commission or Conditions of Approval from City Referral Group.
d. Verification of Traffic Impact Analysis (TIA) **approval** by the Traffic Engineer if a TIA is a Condition of Approval.
e. Verification of Drainage Study **approval** by Engineering Planning if a Drainage Study is a Condition of Approval.
f. Design engineer's certification that the grading plan is in conformance with the approved drainage study.
g. Design engineer's certification that the plans are in conformance with the approved traffic study.

Plans resubmitted to the City for subsequent review shall address all previously made Land Development review comments. The design engineer shall certify the grading plan conformance to the approved drainage study with the initial resubmittal and subsequently thereafter. All redesign from the previous submittal shall be clearly identified. In the event of major changes or significant redesign from the previous submittal, the design engineer should contact the Land Development Superintendent to schedule a meeting to discuss the redesign concurrent with the resubmittal. Failure to meet with Land Development prior to resubmitting a major redesign may delay the plan review process.
The resubmittal review process generally takes between 5 and 15 working days depending on the current work load, complexity of the project, and thoroughness of the design engineer in addressing previously made comments. After reviewing the plans, Land Development will either return the plans to the design engineer to address comments or request that original and duplicate mylars be submitted to the City for

approval.

1.1.2.5 Required Easements and Rights-of-Way

When improvement plans indicate easements to be dedicated or rights-of way granted a complete package must be submitted prior to approval of the plans. This package must include legal descriptions, 8 ½ by 11 sketch and current vesting document. Easements may include SVRE's, ingress/egress, drainage, sewer, and intersite easements.

1.1.3 Final Submittal and Plan Approval

Improvement plans for subdivisions can not be approved until after the Final Map is approved. Prior to submitting original mylars and duplicate mylars to the City for approval, certain prerequisite items must be submitted to and approved by the City. As part of the initial plan submittal the design engineer is required to submit a compete bond estimate form. This form is reviewed and if it is deemed accurate with no major design issues outstanding, an approved bond estimate form will be provided to the design engineer. Prior to submitting mylars for signature, a surety in the amount of the estimate must be obtained by the developer. As part of the Land Development process, the developer is required to post the required surety concurrently with its executed subdivision or project agreement. The subdivision/project agreement is prepared by Land Development staff based upon the information contained in the Developer Agreement Information Form which is required as part of the initial plan submittal. The process of completing these agreements and obtaining the required surety is the responsibility of the developer and should be commenced early on in the process.

1.1.4 Request for Deviation Procedure

All deviations from these Guidelines, the Uniform Standards or City Policy shall be submitted to and approved by the City. There are two types of deviations the engineer may need to address during the design process. First, deviations from the Guideline requirements. All deviations from the Guidelines are to be listed and submitted with the plans and other documents identified in subsection 1.1.1, "Initial Plan Submittal." Upon receipt, the deviation listing will be reviewed by the plan screener and supervisor. If the deviations are deemed to have merit, the plans will be screened and either accepted or rejected. If the deviations are considered to be only for the convenience of the design engineer, the plan screening supervisor will contact the Land Development Superintendent and he will review the deviation request. If the Land Development Superintendent considers the deviations acceptable, the plans will be screened and either accepted or rejected. If the plans are rejected and the design engineer desires to appeal the decision, the appeal shall be made in writing to the Land Development Superintendent. Upon receipt of the design engineer appeal, the Land Development Superintendent will schedule a meeting with the design engineer and the City Planning

Engineer. The purpose of the meeting is to allow the design engineer the opportunity to present its case to support the request. Within five working days following the appeal meeting, City Planning Engineer shall inform the design engineer of his decision. The decision of the City Planning Engineer shall be final.

The second type of deviation is a deviation from the requirements of the Uniform Standards and/or Drawings or City Policy. The design engineer shall identify and request a deviation from Standards in writing and submit the request along with the other documents required in subsection 1.1.1, " Initial Plan Submittal. " If the deviation is deemed to be in the best interest of the City and the project, the plans will be allowed to proceed through the plan review process. If the deviation as requested is determined to be unacceptable to the City, the Land Development Superintendent shall schedule a meeting with the design engineer to attempt to resolve the issue. If the deviation is rejected and the design engineer desires to appeal the decision, the appeal shall be made in writing to the Land Development Superintendent. Upon receipt of the design engineer appeal, the Land Development Superintendent will schedule a meeting with the design engineer and the City Planning Engineer. The purpose of the meeting is to allow the design engineer the opportunity to present its case in support of the request. Within five working days following the appeal meeting, City Planning Engineer shall inform the design engineer of his decision. The decision of the City Planning Engineer shall be final. If the denial of a deviation from Standards or City Policy will significantly impact a project, the design engineer shall contact the Land Development Superintendent to review and resolve the design issue prior to making the initial submittal.

1.2 Plan Setup Requirements

The City is required to be the custodian of all improvement plans in perpetuity once they are approved. As the City moves to archiving plans on electronic media it is important that some degree of uniformity is maintained. The objective of the following plan setup requirements is to provide uniformity and standardization of plan submittal while allowing the design engineer flexibility with respect to presentation. Standardization of information along with uniformity in setup and presentation allows the review process to occur in a more orderly and timely fashion.

1.2.1 Plan Sheet Size

All plans submitted to the City of Las Vegas must be signed and sealed by a Civil Engineer who is registered in the State of Nevada in accordance with Nevada Revised Statutes, NRS 625 and Nevada Administrative Code Board Regulations, NAC 625.611 Plans shall be plotted or drafted onto mylar reproducible sheets and having an overall size of twenty-four inches (24") wide by thirty-six inches (36") long with margins placed accordingly. One and one-half inches (1-1/2") on the left side and one-half inch (½") on all remaining sides with a line thickness of 0.075 inches.

1.2.2 Title Block

Each plan sheet shall contain a title block located adjacent to the right side margin. The design engineer has the flexibility to determine the layout of the title block provided the following information is included somewhere in the title block. The title block shall include: title of sheet; project name; developer's or owner's name, address, and phone number; engineering consultants name, address, and phone number; professional engineer's name, P.E. number and seal; and revision block.

1.2.3 Benchmark

All projects shall utilize and reference an existing recorded City benchmark datum within one-quarter mile of the project site. If an existing benchmark is not located within the one-quarter mile limit, a temporary benchmark on the project site suitable for project construction/inspection purposes shall be established and referenced to the City datum. Every plan sheet to be utilized for construction of improvements shall indicate the referenced benchmark.

1.2.4 Drawing Scales

Drawing scales shall be a minimum of one inch (1") = forty feet (40') horizontal for plan views, unless otherwise noted in these Guidelines.

Drawing scales shall be a minimum of one inch (1") = forty feet (40') horizontal, one inch (1") = four feet (4') vertical for plan and profile when slopes are less than five (5) percent and a minimum of one inch (1") = forty feet (40') horizontal, one inch (1") = eight feet (8') vertical for plan and profile when slopes are greater than five (5) percent. Plan and profile sheets shall be arranged such that the plan view is in the top half and the profile view is in the bottom half of the sheet. Profiles shall have vertical lines at every fifty foot (50') station and horizontal lines at every four foot (4') elevation.

All Details shall be drawn to scale. The horizontal and vertical scale need not be the same. The purpose of requiring details be presented at scale is to allow the plan reviewer the ability to see spatial relationships of the various elements in the Detail.

1.2.5 Plan Orientation

Generally, in laying out and developing the design, the design engineer shall consider the following hierarchy in establishing plan sheet orientation; 1) North should be to the top or right of the sheet, 2) stationing shall be left to right unless the sheet orientation with respect to North will not permit. The image shall only be drawn on the front side of the mylar.

1.2.6 Text Size and Line Weights

The final criteria for acceptance will be that all information provided on the plans be clear, concise and legible when the 24" x 36" sheet drawing is reduced to an 11" x 17" format. The following text size and line weight references are recommended for clarity but are not required. All text which includes but not limited to dimensional text, spot elevations text, notes and other text are recommended to be leroy (L80) or romans.shx font type with a text height of 0.08 inches and a pen thickness of 0.25mm. Profile elevations and stations are recommended to have a text height of 0.1 inches and a pen thickness of 0.50mm. Detail titles are recommended to have bold type font with a height of 0.20 inches. Street names are recommended to also have a bold type font with text height of 0.25 inches. All existing underground utilities are recommended to be shown dashed.

1.2.7 Line Type, Symbols and Abbreviations

The City requires the use of Line Types, Symbols and Abbreviations consistent with the *Uniform Standard Drawings for Public Works' Construction Off-Site Improvements, Clark County Area, Nevada*. Legends and Abbreviation Listings used on the plans shall only include those terms that are not included in the Standards.

1.2.8 Plan Set Organization

The City requires that all sheets in the plan set be sequentially numbered, beginning with the title or cover sheet, with information presented and arranged in the following order:

Title/Vicinity Map/Quantities
General Notes
Master Utility Plan
Grading Plan and Details
Street Plan & Profile/Sections/Details
Traffic Signal Plan
Striping/Signage/Streetlight Plans
Sanitary Sewer Plan & Profile/Details
Storm Drain Plan & Profiles/Details
Water Utility Plan & Profile/Details

Depending on the complexity and scope of the project, a complete plan set may contain plan sheets from any or all of the above referenced groups. The Guidelines indicate the minimum information/data that must be presented and should not deter the design engineer from providing additional information as may be required. In the event the design engineer believes that the requirements of these Guidelines are not applicable to a specific site or condition, the engineer shall request a deviation from the City. To

facilitate the plan review and construction process, the City prefers that certain information be placed in a specific location on given sheets. The preferred location is identified in ***bold italics*** following the item description.

Example: North Arrow ***(upper right quadrant of sheet)***

The above example indicates that the preferred location for the North arrow is in the upper right quadrant of the plan sheet. The City realizes that on rare occasions it may not be possible for the design engineer to comply with the City information placement preference. In those instances, the design engineer needs to identify all deviations from these Guidelines in writing and submit the deviation listing to the City in accordance with subsection 1.1.4, "Request for Deviation Procedure."

1.3 Title Sheet or Cover Sheet Requirements

The design engineer may elect to provide a separate title sheet as part of the entire plan set or utilize the first sheet of the plan set to present additional information such as the vicinity map or quantities and thereby eliminate the need for separate sheets for those items. The Guidelines allow the design engineer flexibility in the placement of information provided that such information is presented in a clear and concise manner. Regardless of whether or not the design engineer elects to utilize a separate title sheet, the first sheet of the plan set shall contain at a minimum the following information:

a. Project Title.
b. Owner's Name and Address.
c. Developer's Name and Address if different than Owner.
d. Approval Signature Block.
e. Blank Space in the lower right corner of the sheet for the City Drawing Number.
f. Sheet Index with sequential sheet numbering.
g. Assessors Parcel Number.

1.4 Vicinity Map Requirements

Every plan set submitted shall contain a vicinity map. The design engineer may elect to place the vicinity map on a separate sheet immediately following the title sheet or place the vicinity map on the title sheet. If the design engineer elects to place the vicinity map on the title sheet, no separate vicinity map sheet is required provided the information required by this subsection is presented on the title sheet. The vicinity map shall relate the project to major land lines and prominent geographic features on an expanded scale. The following information shall be provided either on the title sheet or the vicinity map sheet:

a. A Map of the City of Las Vegas area with the project highlighted.
b. A Site Map of the Project and Construction Area ***(upper right quadrant of sheet)***.

c. North Arrow for City and Site Maps.

In addition, the vicinity map may include the following items when applicable:

d. Highways, Streets, Roads and Railroads.
e. Channels, Washes and Bridges.
f. Other Pertinent Geographic Features.

The City's information placement preference is not applicable when the vicinity map and associated required information is placed on the title sheet.

1.5 General Notes Requirements

Every plan set submitted shall contain a General Note sheet that provides applicable City Standard Notes. The following information shall be presented on either the second or third sheet of the plan set depending on how the design engineer elected to present the information required for the title sheet and vicinity map. The General Note sheet shall contain the following information where applicable:

a. Benchmark Data.
b. Basis of Bearing.
c. City of Las Vegas General Notes.
d. City of Las Vegas Fire Department Notes (where applicable).
e. City of Las Vegas Sewer Notes (where applicable).
f. City of Las Vegas Grading Notes (where applicable).
g. City of Las Vegas Traffic Notes (where applicable).
h. City of Las Vegas Streetlight Notes (where applicable).
i. Other Notes as needed.
j. Construction Notes.
k. Abbreviations used which are not included in the Uniform Standards.
l. Legend of Symbols used which are not included in the Uniform Standards ***(lower right quadrant of sheet)***.
m. Deviations from Standards Block. (If no deviations state "None" in block.)

1.6 Quantity and Schedule Requirements

Every plan set submitted shall contain a quantity estimate. The City requires the quantity estimate to contain quantities of all public improvements in a format consistent with the City's Bond Estimate form. The quantity estimate shall include natural gas and cable TV services. In addition, the City requires quantities of improvements constructed within public easements, whether or not they are publicly maintained. If the project contains both public and private improvements, the design engineer may elect to indicate both quantity estimates on the plans to facilitate the review of the public improvement bond estimate. The quantity estimate may be placed on a separate sheet or on the title sheet. The design engineer may elect to use schedules to clarify

construction items, however; the use of schedules are not mandatory.

1.7 General Plan Sheet Requirements

The City requires that the following information be provided on every plan view or plan and profile sheet:

a. North Arrow.
b. Graphic (Bar) Scale.
c. Benchmark Data.
d. Basis of Bearing.
e. “Call Before You Dig” symbol and notice.
f. Construction Notes.
g. Street Names labeled as “Public” or “Private”.
h. Centerline horizontal control and stationing.
i. Right-of-Way width.
j. Station equations for intersections.

In laying out and developing the design it is the City’s intent to allow the design engineer flexibility in combining various systems on a single sheet. The design engineer may elect to use separate plan and profile sheets for the street and sanitary sewer or may combine both designs on a single plan and profile sheet. All drafting shall be limited to the front side of the sheet. The following sections provide the City’s minimum requirements for each system.

1.8 Master Utility Plan Requirements

Many design engineers find it useful to provide a Master Utility plan as part of the plan set. The inclusion of this sheet is not mandatory. Master Utility plans are generally provided for one of two purposes, either for construction or to indicate the schematic relationships of the various utilities. If the intent of the Master Utility plan is for construction, the plan shall have a scale of not less than one-inch (1") = forty feet (40'), conform to the requirements of subsection 1.7, “General Plan Sheet Requirements,” and provide the information required by this subsection.

If construction plans are included in the submittal for the various utilities at a scale of not less than one-inch (1") = forty feet (40') and the intent of the Master Utility plan is to indicate the schematic relationship of the utilities, then the plan scale can be reduced to a scale of not less than one-inch (1") = one-hundred feet (100'). Schematic Master Utility plans need not conform to the requirements of this subsection.

Master Utility plans to be utilized for construction shall provide the following information:

a. All existing and “to be dedicated” rights-of-ways and easements (Document Numbers for all existing easements shall be provided).

b. All existing water facilities (mains, laterals, valves, appurtenances, etc.).
c. All “to be constructed” utility lines.
d. Sanitary Sewer laterals
e. Sanitary Sewer mains (Indicate ownership, Public or Private).
f. Sanitary Sewer manholes (numbered) with TMH elevations.
g. Storm drains and Manholes (numbered).
h. Horizontal separation between water and sewer.
i. Fire hydrants (located by centerline station).
j. Streetlights (located by centerline station).
k. All “to be constructed” or relocated utility poles and facilities.
l. Underground conduits including interconnect.
m. Traffic signal poles and traffic loops.
n. Driveways.
o. Map indicating downstream sewer lines to connection to “Collector” (12" or larger main).
p. Sewer contribution (listing of average daily and peak flows in MGD).
q. Note indicating status of downstream sewer acceptance by the City.
r. Fire hydrant location detail or reference to standard drawing.
s. Streetlight location detail or reference to standard drawing.
t. Typical detail indicating driveway, sewer lateral and water service locations or provide centerline stationing for each.

If construction information and data is clearly and concisely presented on other sheets of the plan set and the intent of the Master Utility plan is to indicate the spatial relationships of the various utilities, the amount of information on this plan may be reduced.

1.9 Grading Plan Requirements

In addition to the requirements of subsection 1.7, “General Plan Sheet Requirements,” Grading Plans shall contain the following information:

a. Cross Sections along the Project boundary, showing the elevation relationships, property line, and any existing or “to be constructed” walls. The cross sections may be placed either on the Grading plan sheet or referenced to another sheet in the plan set.
b. Finish Floor elevations of nearby buildings and sufficient spot grades on adjacent properties to show elevation relationships. Top of curb elevations for both sides of the street with annotated contours a minimum of 200 feet beyond the limits of construction or the perimeter of the project.
c. Pad and Finish Floor elevations of all new structures.
d. Percentage of grade and direction of flow of streets and drainage easements. The minimum longitudinal grade for streets shall be 0.40%. Where the minimum longitudinal grade cannot be achieved, the City Planning Engineer may approve a

lesser grade provided suitable sub-surface drainage facilities are installed. A minimum grade of 0.5% shall be provided for cross gutters and curb and gutter in knuckles and cul-de-sacs.

e. All existing and “to be constructed” drainage easements, with slopes, dimensions, elevations and Typical Sections.
f. All existing and “ to be constructed” storm drain facilities with size, slope, length, location and type of material clearly identified.
g. All existing and “to be constructed” block walls including retaining and flood walls.
h. Indicate all “Sight Visibility Restriction Easements” (SVRE’s) and either provide dimensions from the right-of way or dimensioned on a referenced Detail. The detail may be placed on the grading plan sheet or referenced to another sheet in the plan set.
i. Distance from project boundary to a major street or major intersection. Major street is defined as a street right-of-way width that exceeds sixty feet (60').
j. Elevations at and along the project boundaries, limits of construction, PC’s, PT’s and grade breaks. At project boundaries provide elevations at the back of lots and top of curb.
k. Existing conditions for the property being developed and surrounding area. Existing conditions shall be shown to the nearest existing improvements or such a distance (minimum 200') from the project boundary to confirm the proposed design is in conformance with the general area.
l. Existing ground elevations at one foot contour intervals for undeveloped property.
m. Dashed lines and labels showing existing improvements with elevation “tags” noted to show the design conformance with existing conditions. Adjacent properties shall be labeled as “Undeveloped” or “Developed”. All “Developed” property shall be identified by project name and reference the appropriate City drawing number.
n. The Engineer’s certificate stating that the Grading Plan conforms to the Approved Drainage Study. The certificate must be signed and dated by the design engineer.

If the project requires offsite grading, the design engineer shall also indicate on the Grading Plan all existing or “to be dedicated” right-of-way or easements required to accomplish the proposed construction. When grading is required outside the limits of the project property and will encroach onto adjacent private property, the design engineer shall obtain written permission from the adjacent private property owner. The written permission letter shall be notarized and state that the adjacent private property owner has reviewed the proposed grading plan and authorized the encroachment. All offsite encroachment letters shall be submitted to the City concurrently with the initial plan submittal.

In developing the grading plan the design engineer may eliminate certain design information that appears on other plan sheets to provide clarity.

1.10 Street Plan and Profile Requirements

Street plan and profiles shall be arranged such that the plan view is in the top half of the sheet and the profile view is in the bottom half of the sheet. In addition to the requirements of subsection 1.7, “General Plan Sheet Requirements,” Street Plans shall contain the following information:

a. Street width dimensioned from back of curb to centerline.
b. Locations of all existing fire hydrants, streetlights, utility poles, sidewalk drains, sidewalks, curb and gutter, ramps, driveways, drainage inlets and other surface improvements. All existing improvements which are within the limits of construction or are to remain or be relocated shall be located by centerline station. Additional dimensions may be required to indicate the relationship of existing improvements to the proposed design.
c. Curve data for centerline and back of curb. This information can be placed directly on the plan or the design engineer may elect to use a curve table. The curve radius, length, tangent and delta angle is required for all horizontal curves.
d. Horizontal control including bearing and distances for tangent sections and curve data shall be provided for all medians.
e. At all intersections provide top of curb stations and elevations at BCR and ECR and tag elevations at the projected lip of gutter through the intersection. Projected lip of gutter elevation tags shall be stationed consistently with the centerline elevation tags. In intersections where cross gutters are proposed the elevation tags shall be at the flowline of the gutter, placed at stations perpendicular or radial to the centerline elevation tags.
f. Stationing and elevations shall be provided along centerline and at back of curb at all beginning and end of vertical and horizontal curves, points of reverse or compound curves, grade breaks, construction limits and match lines.
g. The direction and percent of grade at centerline and street cross slopes. Providing cross slopes in areas of typical cross section is not required. The centerline slope must be indicated on the profile, placement of the centerline slope in plan view is not mandatory.
h. In transition areas and areas that are noted as “grade to drain” provide elevations at edge of pavement or flowline, stationing along the transition or the daylight line, and percent of grade.
i. Plans shall indicate sidewalk ramps with “A” and “B” dimensions provided for each ramp. The “A” and “B” dimensions may be placed in plan view adjacent to the ramp or referenced to a table on the sheet.
j. Sidewalk drains shall be located by centerline station with top of curb and flowline elevations and width of drain labeled.
k. At pavement transitions and project boundaries, barricades and/or delineation shall be provided and labeled.

The street profile shall have vertical lines at every fifty foot (50') station, stationed from left to right unless the sheet orientation with respect to North will not permit and horizontal lines placed at every four foot (4') elevation in accordance with subsection 1.2.4, “Drawing Scales.” Street profiles shall provide the following information

l. The existing ground along centerline shall be provided to the nearest existing improvements or a minimum of two-hundred feet (200') beyond the project boundary. The engineer may be required to extend the limits of the existing ground profile depending on the specific project conditions. The objective of this requirement is to ensure that the design engineer exercises good engineering judgment in evaluating and creating a design that is not only compatible with the adjacent property but with surrounding improvements. The City will exercise flexibility in interpretation of this requirement.
m. The centerline or offset crown profile with elevations provided at 50' stations. The limits of the typical street cross section clearly identified in plan view or by labeling the typical section detail.
n. In transition, warp sections or areas of non-uniform cross section, the design engineer shall provide crown and both curb elevations at a maximum of twenty-five foot (25') stations. This can be accomplished either by providing three profiles or by placing elevation tags in plan view. If the design engineer elects to utilize elevation tags, the curb grades shall be stationed consistent with the crown or centerline stationing.
o. In curves of non-uniform cross section (knuckles), the design engineer shall provide crown and both curb elevations at the quarter delta points. This can be accomplished by providing three profiles or by placing elevation tags in plan view.
p. Stations and elevations shall be provided at all grade breaks, BCR's, ECR's, PC's, PT's, PCC's, PRC's, Transitions and high or low points.
q. Vertical Curves are required when the algebraic difference in grade is one percent (1%) or greater. The station and elevation for the BVC, EVC and PVI shall be provided along with the K-value of the curve. Vertical curves in excess of fifty feet (50') in length shall also have quarter delta elevations and stations provided at a minimum.

1.10.1 Typical Street Section Requirements

Typical street cross sections can be placed either on the appropriate plan and profile sheet or on a separate detail sheet. Typical sections shall identify the street name and the limits where the detail applies. The typical section shall indicate the relative elevation of the left and right curbs with respect to centerline (crown) for symmetrical sections along with the cross slope. For asymmetrical sections (offset crown) of uniform cross section the typical section shall indicate the relative elevation of both curbs and the centerline with respect to the offset crown along with the cross slopes. In addition typical section details shall provide the following:

a. Dimensions from centerline to back of curb and to right-of-way line (or property line)
b. Indicate type of curb and reference standard drawing.
c. Indicate sidewalk location, width and thickness.
d. Indicate asphalt and aggregate base thickness.

e. Provide required construction notes consistent with the geotechnical report.

1.11 Traffic Intersection Signalization Requirements

When a project requires the construction or modification of a traffic signal, a separate Traffic Signal plan will be required. The Traffic Signal plan shall have a scale of one-inch (1") = twenty feet (20'). In addition to the requirements of subsection 1.7, "General Plan Sheet Requirements," Traffic Signal Plans shall contain the following information:

a. Traffic Signal Notes.
b. All existing improvements including streetlights, signal poles, curb and gutter, driveways, sidewalk ramps, drop inlets, surface and subsurface utilities shall be shown and located by centerline stationing.
c. All existing or "to be constructed" hand holes, pull boxes, underground conduits and detector loops shall be shown and located by centerline stationing.
d. All existing or "to be constructed" stop bars, cross walks and pavement marking shall be shown and dimensioned.
e. All improvements "to be constructed" including streetlights, signal poles, pull boxes driveways, sidewalk ramps, curb, drop inlets, and subsurface utilities shall be shown and located by centerline stationing.
f. Each signal type and location.
g. Street Name Sign schedule.
h. Conduit and Cable schedule.
i. Phase Diagram.

1.12 Street Lighting Requirements

The design engineer may elect to provide a separate plan sheet for streetlights and traffic signals or place these on the street plan, the master utility plan or some other sheet. Regardless of where the design engineer elects to place the streetlight or traffic signal design, the plan shall have a scale of not less than one inch (1") = forty feet (40'), conform to the requirements of subsection 1.7, "General Plan Sheet Requirements," and provide the information required by this subsection. If a separate street light /traffic signal sheet is not provided, the sheet index shall clearly indicate the location of the lighting/traffic design and must be consistent throughout the plan set.

a. Street width dimensioned from back of curb to centerline.
b. All BCR's and ECR's located by centerline station.
c. All existing streetlights, signal poles, streetlight conduit and pull boxes labeled and located by centerline station.
d. All existing driveways, fire hydrants, drop inlets, and sidewalk ramps labeled and located by centerline station.
e. All "to be constructed" streetlights, signal poles, streetlight conduit and pull boxes labeled and located by centerline station.
f. All "to be constructed" driveways, fire hydrants, drop inlets, and sidewalk ramps

labeled and located by centerline station.

In areas where the project is adjacent to existing improvements, the design engineer shall provide streetlight information beyond the project limits to confirm the existing streetlight spacing and ensure the streetlight design submitted is in conformance to City standards. Relocation and or modification of the existing streetlight system may be required to obtain conformance.

1.13 Traffic Striping and Signing Requirements

In most cases, subdivision development requires minimal or no striping. The design engineer may elect to provide a separate plan sheet for traffic striping and signing, combine the traffic striping and street lighting on a single plan or place the information on the master utility plan. Regardless of where the design engineer elects to place traffic striping, the plan shall have a scale of not less than one inch (1") = forty feet (40'), conform to the requirements of subsection 1.7, "General Plan Sheet Requirements," and provide the information required by this subsection.

a. Street width dimensioned from back of curb to centerline.
b. All BCR's and ECR's located by centerline station.
c. All existing traffic striping and signs labeled and located.
d. All existing driveways and sidewalk ramps labeled and located by centerline station.
e. All "to be constructed" signs, pavement markings, cross-walks and stop bars labeled and located.

1.14 Sanitary Sewer Plan and Profile Requirements

The design engineer may elect to include the sanitary sewer on the street plan and profile sheet thereby eliminating the need for separate plan and profile sheets for the sanitary sewer. Regardless of where the design engineer elects to place the sanitary sewer, the plan view shall have a scale of not less than one inch (1") = forty feet (40'), be arranged such that the plan view is in the top half of the sheet and the profile view is in the bottom half of the sheet, conform to the requirements of subsection 1.7, "General Plan Sheet Requirements," and provide the information required by this subsection.

a. Existing or "to be constructed" sidewalks, curb and gutter and other surface improvements.
b. Existing or "to be constructed" water mains, laterals, valves, fire hydrants, appurtenances and obstructions.
c. Other known existing utilities including gas, sewer, storm drain, power, CATV, streetlight and interconnect conduits.
d. Horizontal dimension between sanitary main and any existing or "to be constructed" water main.
e. Horizontal location of the sanitary sewer main within the street or easement. The

design engineer can either provide a centerline station and offset for each manhole or can provide horizontal control (bearing and distance or curve data) between manholes, provided the pipe length is indicated in the profile. Curve data is required for all curved sanitary sewer mains regardless of the design engineer's method for providing horizontal control.

f. Indicate the ownership of the sewer as private or public. If the sewer is private, provide an additional note regarding maintenance responsibility.
g. Identify and label all sewer easements. Provide document numbers for all existing easements.
h. Provide centerline station, manhole number, and rim elevation for each manhole. Indicate invert elevations in profile.
i. Type of material, pipe size, length and slope between manholes. This information can be provided in either plan view or on the profile.
j. Provide the existing ground and finish grade over the sanitary sewer main in profile. Profile lines shall show the grades over the centerline of the sewer main.
k. Indicate all water main crossings and vertical separation.
l. Indicate all utility crossings and provide invert elevations.
m. Indicate Manhole type and size and standard drawing number.

1.14.1 Sanitary Sewer Detail Requirements

Any details required for the sanitary sewer system may be placed on the appropriate sanitary sewer plan and profile sheet or referenced to another sheet in the plan set. The details may include trench details, special manholes or other details which are at variance with the Standard Drawings.

1.15 Storm Drain Plan and Profile Requirements

The design engineer may elect to include the storm drain on the street or sanitary sewer plan and profile sheet thereby eliminating the need for separate plan and profile sheets for the storm drain. Regardless of where the design engineer elects to place the storm drain, the plan view shall have a scale of not less than one inch (1") = forty feet (40'), be arranged such that the plan view is in the top half of the sheet and the profile view is in the bottom half of the sheet, conform to the requirements of subsection 1.7, "General Plan Sheet Requirements," and provide the information required by this subsection.

a. Existing or "to be constructed" sidewalks, curb and gutter and other surface improvements.
b. Existing or "to be constructed" water mains, laterals, valves, fire hydrants, appurtenances and obstructions.
c. Other known existing utilities including gas, sewer, storm drain, power, CATV, streetlight and interconnect conduits.
d. Horizontal dimension between storm drain and any existing or to be constructed water main.

e. Horizontal location of the storm drain within the street or easement. The design engineer can either provide a centerline station and offset for each manhole and/or structure or can provide horizontal control (bearing and distance or curve data) between manholes and/or structures provided the pipe length is indicated in the profile. Curve data is required for all curved storm drain regardless of the design engineer's method for providing horizontal control.
f. Indicate the ownership of the storm drain as private or public. If the storm drain is private, provide an additional note regarding maintenance responsibility.
g. Identify and label all drainage easements. Provide document numbers for all existing easements.
h. Provide centerline station, manhole number, and rim elevation for each manhole and/or structure. Indicate invert elevations in profile.
i. Type of material, pipe class and size, length and slope between manholes and/or structures. This information can be provided in either plan view or on the profile
j. Provide the existing ground and finish grade over the storm drain and hydraulic grade line in profile. Profile lines shall show the grades over the centerline of the storm drain.
k. Indicate all water main crossings and vertical separation in profile.
l. Indicate all utility crossings and provide invert elevations in profile.
m. Indicate Manhole type and size.
n. Indicate the station, type, size, top of curb and invert elevations for all existing and "to be constructed" drop inlets.

1.15.1 Storm Drain Detail Requirements

Any details required for the storm drain system may be placed on the appropriate storm drain plan and profile sheet or referenced to another sheet in the plan set. The details may include trench details, special manhole details, drop inlet structures or other details which are at variance with the Standard Drawings.

1.16 Water Utility Requirements

Water system shall be designed in accordance with the applicable Agency requirements. For water systems owned and operated by Las Vegas Valley Water District (LVVWD), water main profiles are required in accordance with subsection 2.22.02, "Water Plan Drawing Submittal Requirements," of the *Uniform Design and Construction Standards for Water Distribution Systems*, published by LVVWD. The design engineer may elect to include the water system on the master utility plan, the street plan and profile or sanitary sewer plan and profile sheet thereby eliminating the need for a separate plan or plan and profile sheets for the water system. Regardless of where the design engineer elects to place the water system, the plan view shall have a scale of not less than one inch (1") = forty feet (40'), conform to the requirements of subsection 1.7, "General Plan Sheet Requirements," and provide the information required by this subsection. Where the standards of the Agency require the system to be profiled, the sheet shall be arranged such that the plan view is in the top half of the

sheet and the profile view is in the bottom half of the sheet. The following shall also be provided:

a. Standard Notes of the governing Agency.
b. Patent Reservations including document number and “to be acquired” Agency easements.
c. All existing or “to be constructed” surface and subsurface improvements.
d. Horizontal dimension between water main and any existing or “to be constructed” sanitary sewer or storm drain.
e. Horizontal location of the water main within the street or easement. The design engineer can either provide a centerline station and offset for each fitting or appurtenance or can provide horizontal control (bearing and distance or curve data) between fittings or appurtenances. Curve data is required for all curved water mains regardless of the design engineer’s method of providing horizontal control.
f. Location of all above grade structures by centerline station and offset.
g. Provide profile of existing ground and finish grade over to be constructed facilities in unimproved areas. The scale of the plan and profile shall conform to subsection 1.2.4, “Drawing Scales.”

1.16.1 Water Utility Detail Requirements

Any details required for the water system may be placed on the appropriate water plan or plan and profile sheet or referenced to another sheet in the plan set. The details may include trench details, details of pipe joints and related items, access manhole details, valve vaults and their components, appurtenances (air valve, blow-off), connection details, cathodic protection or other details.

STANDARD PLAN GUIDELINES AND DESIGN LAYOUT FOR LAND DEVELOPMENT PROJECTS

NOVEMBER 1998

SECTION 2
STANDARD NOTES

2.0 Standard Notes

2.1 City of Las Vegas General Notes

1. All construction and materials shall be in accordance with the "Uniform Standard Specifications for Public Works Construction Off-Site Improvements, Clark County area Nevada", latest issue; the "Uniform Standard Drawings for Public Works Construction, Clark County area Nevada", latest revised edition; the "Summerlin Improvement Standards" for work in the Summerlin area; and other applicable approved standards issued by the controlling agency; the Uniform Building Code; and all local city codes and ordinances applicable, except as noted on this sheet as "Deviations from Standards".

2. The existence and location of any overhead or underground utility lines, pipes, or structures shown on these plans are obtained by a research of the available records. Existing utilities as shown from CLV Plans Library are approximate and for record purposes. Existing utilities are located on plans only for the convenience of the Contractor. Existing utility service laterals may not be shown on the plans. The Contractor shall, at his own expense, locate all underground and overhead interference's which may affect his operation during construction and shall take all necessary precautions to avoid damage to same. The Contractor shall use extreme caution when working near overhead utilities so as to safely protect all personnel and equipment, and shall be responsible for all cost and liability in connection therewith.

3. The Contractor shall take all precautionary measures necessary to protect existing utility lines, structures and street improvements which are to remain in place, from damage, and all such improvements or structures damaged by the Contractor's operations shall be repaired or replaced satisfactory to the City Engineer and owning utility company at the expense of the Contractor.

4. All construction shall be as shown on these plans, any revisions shall have the prior written approval of the City Engineer.

5. Type V cement shall be used in all off-site concrete work. Concrete to be 3000 P.S.I. minimum @ 28 days. Mix designs to be approved by the City, prior to the use on the project.

6. Permits are required for any work in the public Right-of-way. The Contractor shall secure all permits and inspections required for this construction.

7. Expansion joints required, maximum every 300' in extruded-type curb.

8. AC pavement to be one-half inch (½") above lip of all gutters after compaction, except at sidewalk ramps and cross gutters.

9. Curb and gutter found to be unacceptable to the City of Las Vegas shall be removed and replaced per standard drawing 216.

10. Sidewalk ramps shall be constructed in each quadrant of an intersection per standard drawing 235. Exact location of ramps may be adjusted in the field by a City Inspector.

11. Contractor shall provide all necessary horizontal and vertical transitions between new construction and existing surfaces to provide for proper drainage and for ingress and egress to new construction. The extent of transitions to be as shown on plans.

12. All grading work shall conform to the soils report as prepared by the Soils Engineer approved by the City Engineer, and as shown on these plans.

13. Exact location of all sawcut lines may be adjusted or determined in the field by a City of Las Vegas Engineer if location on plans is not clearly shown, or existing pavement condition requires relocations.

14. The Contractor shall take all precautions necessary to protect existing permanent survey monuments. Any monuments disturbed shall be replaced and adjusted per available records in accordance with N.R.S. Stature No. 625.550.

15. Utility company meter boxes, manhole lids, valve covers, etc., shall be located out of driveways, driveway aprons, flowlines, and cross gutters unless written approval is granted by the utility company and the City Engineer.

16. Wall Notes:

17. All walls, new or existing, are only shown on civil plans for the purpose of reviewing grading relationships; flood control and sight distance at intersections. New walls require a separate permit and inspection by the Building Department.

18. Asphalt mix design must be submitted and approved by the City Engineer prior to the placement of Asphalt within City Right of Way.

19. Contractor shall adjust all new and existing inlets, valve boxes, manhole rims, and sewer clean outs, etc. to finish grade as applicable whether or not they are shown on the plans.

20. Materials, handling and placement of Portland Cement Concrete shall be in accordance with applicable sections of NDOT or the Clark County Area Specifications (as applicable) and the plans and details shown hereon.

2.2 City of Las Vegas Sewer Notes

1. All construction and materials shall be in accordance with the latest edition of the Design and Construction Standards for Wastewater Collection Systems and the Uniform Standard Specifications for Public Works' Construction Off-Site Improvements, Clark County Area, Nevada, as amended. It will be the responsibility of the Contractor to be aware of the contents of the above specifications.

2. It shall be the Contractor's responsibility to perform construction as per plans. Any additions, deletions, or changes shall first meet with the approval of the City Planning Engineer.

3. Chisel "S" or "G" in curbs where sewer or gas laterals pass under the curb.

4. Polyvinyl (PVC) sewer pipe shall meet ASTM D-3034 SDR 35 specifications, installed with sand bedding and backfill of Type II aggregate base.

5. All manholes paved in streets eighty (80') foot R/W and larger shall have concrete collars. Streets less than eighty (80') foot R/W will require retrofit if paving does not conform to city standards at the manhole.

6. Tee saddles shall be used to connect sewer laterals to existing main lines up to twelve inch (12") diameter. Connections to fifteen inch (15") or larger mains shall require special procedures. In line "Y" 's shall be used on lines twelve inches (12") or above.

7. Water mains shall be protected in accordance with LVVWD Standards whenever a sewer main crosses over a water main or the sewer is less than eighteen inch (18") under a water main.

8. All Contractors installing sewer mains that will be under the jurisdiction of the City of Las Vegas must be State of Nevada Class "A" Contractors.

9. The City of Las Vegas will not accept any sewer mains which have a vertical deflection of more than one tenth (0.1) of a foot from the approved construction plans at any location. Sewer mains found to exceed this tolerance will have to be repaired or removed or replaced to the satisfaction of the City Planning Engineer prior to acceptance by the City of Las Vegas.

10. Installation of curved sewer requires special construction procedures and inspections. Contact City of Las Vegas Construction Services 24 hours prior to installation.

2.3 City of Las Vegas Traffic Notes

1. All construction signing, barricading, and traffic delineation shall conform to the "Nevada Work Zone Traffic Control Handbook", Latest Edition, and to the "Manual on Uniform Traffic Control Devices", Latest Edition.

2. The Street Sign Contractor shall obtain street names and block numbering from the Planning Department prior to construction.

3. Before any work is started in the right-of-way, the Contractor shall install all advance warning signs for the construction zone, The Contractor shall install temporary stop signs at all new street encroachments into existing City streets where warranted immediately after first grading work is accomplished, and shall maintain said signs until permanent signs are installed.

4. When a designated "Safe Route To School" is encroached upon by a construction work zone and Public Works Staff identifies a need for students to be assisted in the safe crossing through that work zone, the Contractor shall be required to provide a qualified "crossing guard". The guard shall be present for the full duration of time that children are likely to be present.

5. If the improvements necessitate the obliteration, temporary obstruction, temporary removal or relocation of any existing traffic pavement marking, such pavement marking shall be restored or replaced with like materials to the satisfaction of the City Traffic Engineer.

6. The Contractor shall be responsible for providing and installing all permanent signs shown on the plans. Street name signs shall conform in their entirety to current City Standards. All other signs shall be standard size unless otherwise specified on the plans. All sign posts shall be installed in accordance with the current City Standards.

7. When a proposed Street Light Standard is located within five (5') feet of any proposed sign shown on the plans to be mounted on a signpost, the sign shall be mounted on the Street Light Standard and the signpost shall be eliminated.

8. All permanent traffic control devices called for hereon shall be in place and in final position prior to allowing any public traffic onto the portions of the road(s) being improved hereunder, regardless of the status of completion of paving or other off-site improvements called for by these plans.

9. Street signs and stop signs shall be installed per City Standard Specifications for placement of street name signs.

10. The Contractor shall provide barricades, signs, flashers, other equipment and flag persons necessary to insure the safety of workers and visitors.

11. Work in public streets, once begun, shall be expedited to completion so as to provide minimum inconvenience to adjacent property owners and to the traveling public.

12. The Contractor shall be responsible for notifying Citizens Area Transit (C.A.T.) if the construction interrupts or relocates a bus stop or has an adverse effect on bus service on that street to arrange for temporary relocation of stop.

13. Guards shall be obtained by contacting the Metropolitan Police Department Special Events Unit (Phone No: 229-3442) who will provide officers properly trained in traffic control. Fees for the use of these officers shall be set up by Metro and will be paid by the Contractor. The Contractor is responsible for all arrangements with Metro.

2.4 City of Las Vegas Streetlight Notes

1. All street lighting installations shall be in accordance with the street lighting plans, the "Uniform Standard Specifications for Public Works Construction Off-Site Improvements, Clark County Area, Nevada", Latest Revision, and the "Uniform Standard Drawings for Public Works Construction Off-Site Improvements, Clark County Area, Nevada", Latest Revision.

2. No deviation of street light, pull box, conduits (etc.) locations shall be permitted without written approval of the Traffic/Electrical Field Operations Division and the City Engineer. Any deviation from the plan location will require compliance with section 623.L0.03 (e) of the specifications.

3. All existing street lighting shall remain operational during construction.

4. All empty conduit shall have pull strings installed prior to final inspection.

5. Any structure such as block walls, chain link fences, retaining walls, etc., shall leave a minimum clearance of eighteen inches (18") to the face of street lightning pole on all sides when streetlight is installed behind sidewalk, and shall at no time completely enclose the street lighting pole.

6. As-built drawings shall be supplied to the Electrical Services Section prior to any pre-final inspection. The as-built drawing needs to be stamped as-built and signed by the preparer.

7. Service point shall be coordinated with Nevada Power Company, and wherever possible, be located near the center of the circuit. Service points shall be shown on the plans.

8. It shall be assumed that in the absence of an existing, workable circuit to attach to, all installations shall require a new service for operation of the circuit.

9. Wherever there is an overhead utility that may conflict with the installation of street lightning circuits and/or poles, these conflicts must be resolved between the developer and the utilities involved before streetlight bases are installed at no expense to the City of Las Vegas.

10. The Contractor shall furnish complete service to transformers and control systems if required on plans.

2.5 City of Las Vegas Grading Notes

1. In the event that any unforeseen conditions not covered by these notes are encountered during grading operations, the Owner/Engineer shall be immediately notified for direction.

2. It shall be the responsibility of the Contractor to perform all necessary cuts and fills within the limits of this project and the related off-site work, so as to generate the desired subgrade, finish grades and slopes shown.

3. Contractor shall take full responsibility for all excavation. Adequate shoring shall be designed and provided by the Contractor to prevent undermining of any adjacent features or facilities and/or caving of the excavation.

4. The Contractor is warned that an earthwork balance was not necessarily the intent of this project. Any additional material required or leftover material following earthwork operations becomes the responsibility of the Contractor.

5. The Grading Contractor is responsible to coordinate with the owner to provide for the requirements of the project Storm Water Pollution Prevention Plan (SWPPP) and associated permit.

6. Contractor shall grade to the lines and elevations shown on the plans within the following horizontal and vertical tolerances and degrees of compaction, in the areas indicated:

	Horizontal	Vertical	Compaction
A. Pavement Area Subgrade	0.1'+	+0.0' to -0.1'	See Soils Report
B. Engineered Fill	0.5'+	+0.1' to -0.1'	See Soils Report

Compaction Testing will be performed by the owner or his representative.

7. All cut and fill slopes shall be protected until effective erosion control has been

established.

8. The use of potable water without a special permit for building or construction purposes including consolidation of backfill or dust control is prohibited. The Contractor shall obtain all necessary permits for construction water.

9. The Contractor shall maintain the streets, sidewalks and all other public right-of-way in a clean, safe and usable condition. All spills of soil, rock or construction debris shall be promptly removed from the publicly owned property during construction and upon completion of the project. All adjacent property, private or public shall be maintained in a clean, safe and usable condition.

10. In the event that any temporary construction item is required that is not shown on these drawings, the owner agrees to provide and install such item at his own expense and at the direction of the City Engineer. Temporary construction includes ditches, berms, road signs and barricades, etc.

2.6 City of Las Vegas Fire Department Notes

1. All work shall be done in strict accordance with the City of Las Vegas Fire Department "Hydrant Specifications"; "Hydrant Installation Specifications"; and Ordinance No.3994.

2. Authorized hydrants for this project are:
   A. Kennedy Guardian
   B. Mueller a-423 Centurion
   C. Clow Model 2546 Medallion

3. On any new home or building installation, accessible fire hydrants shall be installed before combustible construction commences and said fire hydrants shall be in good working order with an adequate water supply.

4. Contractor shall place a blue reflective marker at centerline of street adjacent to fire hydrant as required in Ordinance No.3944 to identify fire hydrant locations.

5. Contractor shall call the Las Vegas Building Department at 229-2071 for underground inspection, pressure and flush verification of all fire hydrants and fire lines before back filling.

6. Painting of the curbs and hydrant and any work necessary for protection of hydrants from physical damage, per Ordinance No. 3944, shall be completed before approval by the City of Las Vegas Fire Department.

7. A permit is required from the Fire Department for on-site water lines and fire

hydrants. The permit and Contractor's material and test certificate for underground piping form shall be obtained from the Fire Protection Engineer prior to any work beginning.

8. Private fire hydrants shall be painted red.

9. A flow test must be witnessed by the Fire Department prior to occupancy for verification of required on-site water supply.

10. All on-site fire main materials must be U.L. listed and A.W.W.A. approved.

11. Fire Hydrant Spacing:
Residential - 500 feet unsprinklered; 1000 feet sprinklered.
Commercial, including multi-family - 300 feet unsprinklered; 600 feet sprinklered.

12. Where new water mains are extended along streets, hydrants shall be spaced at maximum one-thousand (1,000') foot spacing to provide for transportation hazards.

13. No fire hydrant shall be located within the required radius of a cul-de-sac or within twenty (20') feet of the perimeter of the radius of the cul-de-sac.

14. No fire hydrant shall be located within six feet (6') of any curb return, driveway, power pole, street light or any other obstruction.

15. Two sources of supply are required whenever there are four (4) or more fire hydrants installed on a single system.

16. Not more than two (2) hydrants can be out of service due to a single main break.

17. Fire apparatus access roads shall have an unobstructed width of not less than twenty feet (20') provided no parking is allowed, not less than twenty-eight feet (28') if parallel parking is allowed on one side, and not less than thirty-six feet (36') if parallel parking is allowed on both sides. Vertical clearance shall not be less than thirteen-feet-six - inches (13' 6").

18. The turning radius for any fire apparatus access road and/or fire lane, public or private, shall be not less than forty-five feet (45') outside radius and twenty-two feet (22') inside radius.

19. A fire apparatus road shall be required when any portion of an exterior wall of the first story is located more than one-hundred fifty feet (150') from a Fire Department vehicle access (See exceptions in UFC 94, section 902.2).

20. All dead end fire apparatus access roads and/or fire lanes, public or private, in

excess of one-hundred fifty feet (150') in length shall be provided with an approved turn around area. See Ordinance No. 3944.

21. Access roads shall be marked by placing approved signs at the start of the designated fire lane, one sign at the end of the fire lane and with signs at intervals of one-hundred feet (100') along all designated fire lanes. Signs to be placed on both sides of an access roadway if needed to prevent parking on either side. Signs to be installed no higher than ten feet (10') or less than six feet (6') form roadway level. The curbs along or on the pavement or cement if curb is not present, shall be painted with a red weather resistant paint in addition to the signs.

22. Electrically controlled access gates shall be provided with an approved emergency vehicle detector/receiver system. Said system shall be installed in accordance with the City of Las Vegas Guidelines for Automatic Emergency Vehicle Access Gates.

2.7 Las Vegas Valley Water District Notes

1. No work shall begin until the water plans have been released for construction by the LVVWD. Following water plan approval, forty-eight (48) hour notice shall be given to the LVVWD Communication Support Center (258-7171) prior to the start of construction. Notice must be given by 2:00 P.M. the business day prior to a LVVWD inspection.

2. All work shall conform to LVVWD standard plates, drawing, and specifications and the Uniform Design and Construction Standards for Water Distribution Systems (UDACS), latest edition.

3. All work, except as modified by these plans or by note 2, shall be done in accordance with the most current draft or edition of the Uniform Standard Specifications for Public Works Construction Off-Site Improvements, Clark County Area.

4. A single pipe material shall be used throughout the project, unless otherwise approved by the LVVWD.

5. All service laterals two inches (2") in diameter and smaller shall be copper tubing with LVVWD approved service saddles.

6. All water meter boxes shall be located outside of driveway areas.

7. All valves shall be located outside of driveways, gutters, curbs and alley gutters.

8. The following requirements must be met in the event a water line and a sanitary

sewer or storm sewer line cross:

A minimum eighteen inch (18") vertical separation (outside to outside) must be maintained when the water line is installed over the sanitary or storm sewer line. If the vertical separation cannot be maintained or the water line must be placed under the sanitary or storm sewer line, the sanitary or storm sewer line must be constructed with one of the following or, as shown on these plans:

A. Potable water supply quality material
B. Encasement, with four inch (4") concrete (minimum)
C. Sleeving with potable water supply quality pipe.

Each provision must extend along the sanitary or storm sewer, on either side of the water main, a minimum ten foot (10') distance perpendicular to the exterior of main.

9. Warning tape shall be required over all mains, all six inch (6") diameter and larger service laterals, and any service lateral not installed perpendicular to the main in accordance with Standard Plate No. 27.

10. All water facilities shall be filled, disinfected, pressure tested, flushed, filled and an acceptable water sample obtained prior to connection to the LVVWD'S Distribution System.

11. The Contractor must obtain all meters two inches (2") and smaller from LVVWD Central Stores. Telephone 258-3152 forty-eight (48) hours prior to pick-up.

12. Construction may interrupt service, with LVVWD approval and proper notification, between the hours of 10:00 P.M. and 6:00 A.M. Sunday through Thursday. Circumstances that may require temporary service feed must have prior LVVWD approval.

13. All water facility construction materials used must be as listed on the LVVWD'S pre-approved materials and manufacturers listing for new facilities, latest revision or specifically approved on these plans.

14. Approval of these plans for the water stubout installation will not be construed as a commitment for water service to this property.

15. CONDITIONAL APPROVAL OF VALVED OUTLET (6" AND LARGER)

In the event the water plans show one or more valved outlets extending out of paved areas, installations of these outlets is acceptable, however, if the outlets are incorrectly located or not used for any reason when the property is developed, the developer shall abandon the outlets at the connection to the

active main in accordance with the district's standards and at the developer's expense.

16. WATER CROSSING NOTE

The following are the requirements that must be met when there is a water-sewer crossing:

When protection of the water line is considered, the minimum vertical distance of eighteen inches (18") must be maintained when the water line is installed over the sewer/storm line. If this distance cannot be maintained because of physical obstructions or the water line must be placed under the sewer/storm line, the sewer/line must be constructed with any on if the following:

A. Extra heavy cast iron or ductile iron pipe
B. Water supply quality
C. Encasement with 4 inches minimum of concrete or sleeving with water quality pipe.

Each of these provisions must be extended for ten feet (10') on either sides of the water line at 90 degrees to the crossing.

SUBMITTAL SCREENING CHECKLIST {PRIVATE }

PROJECT NAME: _____

ENGINEER: _____

LOCATION: _____

REVIEWED BY: _____ DATE: _____

ACCEPTED ❒

FOR REVIEW

REJECTED ❒

INITIAL PACKAGE

(An initial submittal will not be "accepted for review" until all of the following items are satisfied)

	SATISFIED	NOT SATISFIED	
1.	❒	❒	4 sets of checkprints
2.	❒	❒	1 completed bond estimate form - public improvements only
3.	❒	❒	*2 copies of soils report, public R/W pavement only, (or proof of previous submittal)
4.	❒	❒	**Verification of drainage study submittal (if required by "conditions of approval")
5.	❒	❒	**Verification of Traffic study submittal (if required by "conditions of approval")
6.	❒	❒	Copy of "conditions of approval" as provided to the developer from Planning Commission and/or the City Council, or Administrative Reviews
7.	❒	❒	Plans shall be stamped and signed in accordance with NAC 625.611.

* Soils reports are required when streets are being constructed as part of the project.
** Drainage studies are submitted directly to CLV Flood Control and TIA's are submitted directly to Transportation Planning and go through an independent screening process. Plans will not be "Accepted for Review" until the drainage study and TIA have been "accepted for review".

INITIAL PLAN SCREENING CHECKLIST

ACCEPTED ❒

REJECTED ❒

PROJECT NAME: _____

ENGINEER: _____

LOCATION: _____

REVIEWED BY: _____ DATE: _____

ALL SHEETS MUST CONTAIN THE FOLLOWING

SATISFIED	NOT SATISFIED	
❒	❒	Must have the standard City of Las Vegas title block
❒	❒	Must be 24" x 36"
❒	❒	"Call Before You Dig" symbol & telephone # (plan sheets)
❒	❒	Must clearly show the name (and "Phase" or "Unit") of the project. For subdivisions - name to agree with final map. For multiple units, each final map to have a separate set of improvement drawings
❒	❒	Must be numbered consecutively and show the total number of sheets
❒	❒	Must show the name, address, and telephone number of the firm preparing the plans
❒	❒	North Arrow and Scale (Plan Sheets)
❒	❒	Benchmark (from CLV vertical control list or acceptable County benchmark). Must show ID number, location, and elevation per NAVD 88
❒	❒	Must show all existing improvements in, and adjacent to, the project. Must clearly distinguish "existing" and "to be constructed" improvements (Plan Sheets)

TITLE SHEET - C1

❒	❒	Shows name (and Phase or Unit) of the project. Project Title to match Final Map
❒	❒	Shows name and address of Owner and/or Developer
❒	❒	Approval Block for City Planning Engineer & statement/disclaimer
❒	❒	Approval Block for Fire Marshall

TITLE SHEET - C1-(continued)

SATISFIED	NOT SATISFIED	
❒	❒	Approval Block for L.V.V.W.D.Approval Block for L.V.V.W.D.
❒	❒	Approval Block for Nevada Power Co. (If streetlights are to be installed and/or relocated)
❒	❒	Summerlin Design Review Committee (if in Summerlin)
❒	❒	Assessor's Parcel Number

VICINITY MAP SHEET - C2

❒	❒	Provide a vicinity map showing the location of the project. Map shall include a north arrow
❒	❒	Provide a sheet index for all sheets in the lower right corner. All sheets are to be numbered consecutively

GENERAL NOTES SHEET(S) - C3

❒	❒	City of Las Vegas General Notes
❒	❒	City of Las Vegas Grading Notes
❒	❒	City of Las Vegas Sewer Notes
❒	❒	City of Las Vegas Traffic Notes
❒	❒	City of Las Vegas Streetlight Notes
❒	❒	City of Las Vegas Fire Department Notes
❒	❒	Las Vegas Valley Water District Standard Notes
❒	❒	"Deviations from Standards" list
❒	❒	Basis of Bearing
❒	❒	Benchmark I.D. number, location and elevation per NAVD 88
❒	❒	Abbreviations & Legend

PROJECT QUANTITY AND SCHEDULE SHEET - C4

SATISFIED	NOT SATISFIED	
❒	❒	List of project quantities (labeled as "Public" or "Private")
❒	❒	Manhole and/or structure schedule(s)

MASTER UTILITY PLAN - C5

❒	❒	All streets named and existing & future R/W width to centerline
❒	❒	Sewer daily average and peak flow.
❒	❒	Details of hydrant and streetlight location
❒	❒	Sewer discharge map to 12" or larger sewer
❒	❒	Hydrants and streetlights located by station (existing & proposed)
❒	❒	Water and sewer facilities located and dimensioned from Centerline or property line
❒	❒	Driveways shown - Sidewalk Ramps located
❒	❒	Fire Department Flow Calculation Information

GRADING PLAN - G1

❒	❒	Cross Sections along the project's boundary with adjacent properties, showing the elevational relationship, property line, and any existing or "to be constructed" walls
❒	❒	Finished floor elevations of all buildings adjacent to this property and spot grades on adjacent properties to show elevational relationships
❒	❒	Pad and finished floor elevations of all new structures
❒	❒	Street names shown
❒	❒	Percentage of grade and direction of flow
❒	❒	Poposed and existing drainage easements, with dimensions, elevations and typical sections as needed
❒	❒	Size, slope, location, and description of existing and "to be constructed" storm drain facilities

GRADING PLAN - G1 (continued)

SATISFIED NOT SATISFIED

❒ ❒ All existing and "to be constructed" block walls

❒ ❒ "Sight visibilty easements" (with dimensions)

❒ ❒ Distance and bearing from project boundary to major intersection or major roadway

❒ ❒ Sidewalk Ramps with dimensions

❒ ❒ Engineer's note stating that the grading plan conforms with the approved drainage study

❒ ❒ Elevations shown (top of curb, flowline and crownline) at limits of construction, P.C.'s, P.T.'s, and grade breaks

❒ ❒ Contours, at one foot (1') intervals, for undeveloped property

❒ ❒ Dashed lines and labels showing existing improvements with elevations noted (as needed) to show the project's conformity with the existing conditions

❒ ❒ Show existing or "to be dedicated" rights of way and easements

❒ ❒ If grading to daylight show distance and grade to daylight

❒ ❒ Existing Conditions: Must show "Existing Conditions" for the property being developed and within one hundred feet (100') of the project's boundary:

STREET PLAN AND PROFILE SHEET(S) - S1

❒ ❒ Plan over profile

❒ ❒ Street names with Right of Way and Back of Curb widths indicated and a designation as "Public" or "Private" to be maintained by ..... shown on each street (plan or section., if on each sheet)

❒ ❒ Centerline Bearing(s) and stationing

❒ ❒ Curve Data

❒ ❒ Profile for centerline, near and far curbs. Also show crown profile if there is an offset crown

TYPICAL SECTION(S) - S2

SATISFIED NOT SATISFIED

❒ ❒ Show sidewalk ramps with dimensions

❒ ❒ Extend existing ground profile 200’ beyond project

❒ ❒ Typical sections must have R/W or PL Dimensions, cross slopes, type of curb, width of sidewalks, and the structural section material and thickness shown

STRIPING PLAN - TS1 (80’ OR GREATER R/W)

❒ ❒ All streets named and Right of Way and Back of Curb dimensions shown

❒ ❒ Show existing/proposed striping and traffic delineators

TRAFFIC SIGNAL PLAN - T1

❒ ❒ All streets named (with dimensions)

❒ ❒ Conduit runs shown

❒ ❒ Detail of signal pole location

❒ ❒ Detail of signal improvements (foundation and pole type/size, location of pull boxes, cabinets, conduit, detection facilities...)

STREETLIGHTING PLAN - SL1

❒ ❒ North arrow & scale

❒ ❒ Centerline stationing

❒ ❒ Existing/to be constructed streetlights (located via stationing)

❒ ❒ Conduit & pullboxes shown

❒ ❒ All streets named (with Right of Way and Back of Curb dimensions)

❒ ❒ Driveways shown

❒ ❒ Detail of streetlight location

SANITARY SEWER PLAN & PROFILE SHEETS(S) - SS1

SATISFIED	NOT SATISFIED	
❒	❒	Plan over profile
❒	❒	Street names with Right of Way and Back of Curb dimensions
❒	❒	Sewer(s) labeled as public or private
❒	❒	Show all laterals
❒	❒	Sewer(s) located with dimensions from CL or PL (provide bearing of sewer line if not parallel to CL or PL)
❒	❒	Manholes numbered
❒	❒	Length of pipe distance between manholes, type, size, and slope
❒	❒	Indicate separation at all waterline crossings
❒	❒	All sewer easements. (DOC # if existing)

STORM DRAIN PLAN & PROFILE SHEET(S) - SD1

❒	❒	Plan over profile
❒	❒	Street names with Right of Way and Back of Curb dimensions
❒	❒	Sewer(s) labeled as public or private
❒	❒	Show all laterals and drop inlets
❒	❒	Storm sewer(s) located with dimensions from CL or PL (provide bearing of storm sewer line if not parallel to CL or PL)

STORM DRAIN PLAN & PROFILE SHEET(S) - SD1 continued

SATISFIED	NOT SATISFIED	
❒	❒	Manholes numbered
❒	❒	Length of pipe distance between manholes, type, size, and slope
❒	❒	Indicate separation at all waterline crossings
❒	❒	All drainage easements. (DOC # if existing)

WATER LINE PLAN & PROFILE SHEET(S) - W1

❒	❒	Plan over profile (18" and over, or in unimproved areas)
❒	❒	Street names with Right of Way and Back of Curb dimensions
❒	❒	Waterline(s) located with dimensions from CL or PL (provide bearing of waterline line if not parallel to CL or PL)
❒	❒	All valves shown
❒	❒	Length of pipe distance between valves, type, size and slope
❒	❒	Indicate separation at all utility crossings
❒	❒	All waterline easements. (DOC# if existing)